Doc Code: AP.PRE.REQ

PTO/SB/33 (07-05)
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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional): Morgan 13

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents P O Box 1450 Alexandria VA 22313-1450" [37 CFR 1 8(a)]

on _____

Signature _____

Typed or printed name _____

Application Number	Filed
10/775,911	2/10/2004

First Named Inventor: Dennis R. Morgan

Art Unit	Examiner
2613	David J. Lee

Applicant requests review of the final rejection in the above-identified application No amendments are being filed with this request

This request is being filed with a notice of appeal

The review is requested for the reason(s) stated on the attached sheet(s)
Note: No more than five (5) pages may be provided.

I am the

- ☐ applicant/inventor.
- ☐ assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3 73(b) is enclosed (Form PTO/SB/96)
- ☒ attorney or agent of record Registration number 36,597
- ☐ attorney or agent acting under 37 CFR 1 34 Registration number if acting under 37 CFR 1 34 _____

Kevin M. Mason
Signature

Kevin M. Mason
Typed or printed name

203-255-6560
Telephone number

July 18, 2007
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____ forms are submitted.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application

Applicants(s): Dennis R Morgan
Case: 13
Serial No.: 10/775,911
Filing Date: February 10, 2004
Examiner: Lee, David J
Group: 2613

Title: Method and Apparatus for Two-Port Allpass Compensation of Polarization Mode Dispersion

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MEMORANDUM IN SUPPORT OF
PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

STATEMENT OF GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-22 are presently pending in the above-identified patent application Claims 1-5 and 13-17 are rejected under 35 U.S.C. §103(a) as being unpatentable over Madsen ("Optical All-Pass Filters for Polarization Mode Dispersion Compensation"), in view of Bessios (United States Number 7,110,683). In addition, claims 7-11 and 18-22 are rejected under 35 U.S.C. §103(a) as being unpatentable over Madsen in view of Wang et al (United States Publication Number 2005/0008070 A1). Claims 6 and 12 are objected to as being dependent on a rejected base claim, but would be allowable if rewritten in independent form.

Arguments

Independent Claims 1, 7, 13 and 18

Independent claims 1 and 13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Madsen in view of Bessios. With regards to claims 1 and 13, the Examiner asserts that Madsen discloses a method for compensating for polarization mode dispersion in an optical fiber communication system (citing Abstract), comprising the steps of: reducing said polarization mode dispersion using a cascade of all-pass filters (citing Fig. 1); and adjusting coefficients of said all-pass filters (citing 3rd full par. Of col. 1 on page 879).

The Examiner acknowledges, however, that Madsen does not expressly disclose that the coefficients are adjusted using a least mean square (LMS) algorithm. The Examiner asserts, however, that adaptive FIR filters, such as those in Madsen, require an algorithm to determine proper coefficients, and that it is well known in the art to use the least mean square algorithm in adaptive FIR filters for optimizing coefficients (citing Bessios).

Applicant acknowledges that the use of the LMS algorithm for adapting FIR filters is both well-known and straightforward. Applicant strongly asserts, however, that it would not have been obvious to a person of ordinary skill in the art to apply the LMS algorithm to the adaptation of all-pass filters. It is not known to adapt all-pass filters using the LMS algorithm. Furthermore, the adaptation equations for FIR filters do not apply to the adaptation of an all-pass filter. In the response to argument section, the Examiner alleges that this type of attorney argument is not evidence. One of ordinary skill in the art, however, would not assume that adaptation equations for FIR filters would apply in a straightforward manner to the adaptation of an all-pass filter. Applicant is not aware of any published work that would provide guidance on how to translate the adaptation equations for FIR filters to the adaptation of an all-pass filter.

In further support of Applicant's position that it would not have been obvious to a person of ordinary skill in the art to apply the LMS algorithm to the adaptation of all-pass filters, Applicant noted in the prior response that for most applications, an all-pass filter is not

advantageous and an FIR filter is much easier to implement. Applicant submits that this is established by the relative complexity of the equations in the present application, as compared to the straightforward equations (found in many textbooks) for using the LMS algorithm for adapting FIR filters. The Examiner appears to agree that "the use of the LMS algorithm for adapting FIR filters is both well-known and straightforward."

The Examiner further asserts that the combination is "readily feasible." The Examiner has not provided any guidance on how to translate the adaptation equations for FIR filters to the adaptation of an all-pass filter. Thus, the combination of Madsen and Bessios would not operate to compensate for polarization mode dispersion in an optical fiber communication system. Applicant again submits that since the adaptation equations for FIR filters do not apply to the adaptation of an all-pass filter, the combination suggested by the Examiner would not work.

Independent claims 7 and 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Madsen in view of Wang et al. With regards to claims 7 and 18, the Examiner again asserts that Madsen discloses a method for compensating for polarization mode dispersion in an optical fiber communication system (citing Abstract), comprising the steps of: reducing said polarization mode dispersion using a cascade of all-pass filters (citing Fig. 1); and adjusting coefficients of said all-pass filters. (citing 3rd full par. of col. 1 on page 879).

The Examiner acknowledges, however, that Madsen does not expressly disclose that the coefficients are adjusted using a Newton algorithm. The Examiner asserts, however, that adaptive FIR filters, such as those in Madsen, require an algorithm to determine proper coefficients, and that it is well known in the art to use the Newton algorithm in adaptive FIR filters for optimizing coefficients (citing Wang et al.)

Applicant acknowledges that the use of the Newton algorithm for adapting FIR filters is both well-known and straightforward. Applicant strongly asserts, however, that it would not have been obvious to a person of ordinary skill in the art to apply the Newton algorithm to the adaptation of all-pass filters. It is not known to adapt all-pass filters using the

Newton algorithm. Furthermore, the adaptation equations for FIR filters do not apply to the adaptation of an all-pass filter. Again, in the response to argument section, the Examiner alleges that this type of attorney argument is not evidence. One of ordinary skill in the art, however, would not assume that adaptation equations for FIR filters would apply in a straightforward manner to the adaptation of an all-pass filter. Applicant is not aware of any published work that would provide guidance on how to translate the adaptation equations for FIR filters to the adaptation of an all-pass filter.

In further support of Applicant's position that it would not have been obvious to a person of ordinary skill in the art to apply the Netwon algorithm to the adaptation of all-pass filters, Applicant noted in the prior response that for most applications, an all-pass filter is not advantageous and an FIR filter is much easier to implement. Applicant submits that this is established by the relative complexity of the equations in the present application, as compared to the straightforward equations (found in many textbooks) for using the Newton algorithm for adapting FIR filters. The Examiner appears to agree that "the use of the Newton algorithm for adapting FIR filters is both well-known and straightforward."

The Examiner further asserts that the combination is "readily feasible." The Examiner has not provided any guidance on how to translate the adaptation equations for FIR filters to the adaptation of an all-pass filter. Thus, the combination of Madsen and Wang et al. would not operate to compensate for polarization mode dispersion in an optical fiber communication system. Applicant again submits that since the adaptation equations for FIR filters do not apply to the adaptation of an all-pass filter, the combination suggested by the Examiner would not work.

Applicants respectfully request the withdrawal of the rejection of independent claims 1, 7, 13 and 18.

Dependent Claims

Claims 2-6, 8-12, 14-17 and 19-22 are dependent on independent claims 1, 7, 13 and 18, and are therefore patentably distinguished over Madse, Bessios and Wang et al., alone or

in any combination, because of their dependency from independent claims 1, 7, 13 and 18 for the reasons set forth above, as well as other elements these claims add in combination to their base claim.

All of the pending claims, i e , claims 1-22, are in condition for allowance and such favorable action is earnestly solicited.

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Examiner is invited to contact the undersigned at the telephone number indicated below.

The attention of the Examiner and the Pre-Appeal Board to this matter is appreciated

Respectfully submitted,

Date: July 18, 2007

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